

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference 1304.P004PCT	FOR FURTHER ACTION	see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.
International application No. PCT/SG03/00063	International filing date (day/month/year) 28 March 2003	(Earliest) Priority Date (day/month/year) 3 April 2002
Applicant NANYANG TECHNOLOGICAL UNIVERSITY et al		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (See Box II).

4. With regard to the title, ☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract, ☐ the text is approved as submitted by the applicant

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No. 1

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure

☐ because this figure better characterizes the invention

☐ None of the figures

**Box III**      **TEXT OF THE ABSTRACT (Continuation of item 5 of the first sheet)**

A sensor for sensing and monitoring a property associated with transformation of a biochemical analyte by a micro-organism, the sensor comprising a glass permeable coating applied to an unclad portion (14) of a fibre optic member (13). The coating has a transformable precursor impregnated into it, the precursor being specifically metabolisable by one or more targeted organisms. When the sensor is placed in contact with a sample in a container (15) contacting an active targeted micro-organisms, the precursor is transformed by the micro-organisms to produce a spectroscopically detectable indicator of the property of the analyte. Spectroscopic information may be analysed by a computer program to provide an overall index of microbiological activity for the targeted micro-organism. The invention extends to a method of producing a sensor and a method of identifying the presence of a targeted micro-organism.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG03/00063

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int. Cl. <sup>7</sup> : G01N 21/01, 21/77, 21/94, G01J 3/42		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DWPI AND JAPIO: [G02B 6/- and (sense or detect or monitor)] and (G01J 3/- or G01N 33/- or G01N 21/-) and (light or optic)(s)(fiber or cable or waveguide) and (organism or bacteria or contaminant or cellular or biological)		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 103 535 A (PILEVAR et al) 15 August 2000 See abstract	1-19
X	EP 75 353 B (BATTELLE MEMORIAL INSTITUTE) 19 August 1987 See fig 10b	1-19
X	GB 2 103 786 A (IMPERIAL CHEMICAL INDUSTRIES PLC) 23 February 1983 See abstract	1-19
X	WO 98/54573 A (UNIVERSITY OF MARYLAND) 3 December 1998 See abstract	1-19
X	US 5 854 863 A (ERB et al) 29 December 1998 See fig 7 and col 10.	1-19
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>		
Date of the actual completion of the international search 27 May 2003		Date of mailing of the international search report 3 JUN 2003
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929		Authorized officer  SUSAN T. PRING Telephone No : (02) 6283 2210

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/SG03/00063

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member		
US 6 103 535	NONE		
EP 75 353	US 4 608 344	WO 83/01112	AU 89 041/82
	DE 32 77 030	JP 58/501481	
GB 2103 786	DE 32 79 159	US 4560248	EP 72 627
	JP 58/077641		
WO 98/54573	US 4 909 990	AU 78023/98	
US 5 854 863	NONE		
END OF ANNEX			